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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/920,783	08/01/2001	Koji Kimura	80398P379	5170

8791 7590 11/30/2004

BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES, CA 90025-1030

EXAMINER	
KUMAR, PANKAJ	

ART UNIT	PAPER NUMBER
2631	

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/920,783	KIMURA, KOJI	
	Examiner	Art Unit	
	Pankaj Kumar	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 August 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-12,14,20 and 28-31* is/are rejected.

7)☒ Claim(s) *4,13,15-19 and 21-27* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 14 recites the limitation "the clock". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3, 5-6, 20, 28, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taura 6067332.

4. Here is how the reference teaches the claims:

5. As per claim 1: A method for adjusting a reference frequency in an electronic device comprising: determining if a transmission frequency is within a capture range (Taura fig. 4: 90, 91, 111, 102 checking if frequency is within frequency grid), and modifying the reference frequency if the transmission frequency is not within the capture range (Taura fig. 4: 91, 111, 90: if when frf set to next frequency (what it thinks the transmission frequency might be) and that frequency is greater than the top of the frequency grid, frf is modified to the bottom frequency in the grid). What Taura does not teach is wherein frequency grid is the capture range. It is

common knowledge that the system would be developed such that both capture range and frequency grid are for frequencies of interest. It would have been obvious to one skilled in the art at the time of the invention to modify Taura to teach that frequency grid is the capture range. One would be motivated to do so since both Taura and applicant's system are interested in the frequencies of interest and frequency grid and capture range both provide frequencies of interest.

6. As per claim 2: The method of claim 1 further comprising setting the reference frequency to an initial value (Taura fig. 4: after start, set to initial value in 90).

7. As per claim 3: The method of claim 2 wherein the initial value of the reference frequency is a previous reference frequency used by the electronic device (Taura fig. 4: when the system is started more than once, step 90 would occur more than once and thus at one starting, the initial value is what is set in 90 and then in another starting, the initial value will again be the same as what is set in 90).

8. As per claim 5: The method of claim 2 wherein the initial value of the reference frequency is a predetermined reference frequency (Taura fig. 4: 90, frf is predetermined to be the bottom frequency of the grid).

9. As per claim 6: The method of claim 2 further comprising allowing the reference frequency to stabilize (Taura fig. 4: stabilizing by finding a center frequency 107 and if a center frequency is not found then frf is incremented or decremented in 121, 122).

10. As per claim 20: A system comprising: a clock (not in Taura but Taura does teach fig. 1: 4; fig. 3: 56, col. 5 lines 50-51: "The reference oscillator 56 is a voltage-controlled crystal oscillator"), and a demodulator (Taura fig. 1: 7, 11) coupled to the clock (Taura fig. 1: 7 and 11 coupled via other components to 4 - which also contains 56 as shown in fig. 3) to provide a negative feedback signal to the clock (Taura fig. 1: output of controller to 4) such that a reference frequency generated by the clock is modified (Taura fig. 4: frf is modified in 90, 91, 107, 121, 122). What Taura does not teach is clock. It is common knowledge that clocks oscillate and clocks are used to define a reference point. It would have been obvious to one skilled in the art at the time of the invention to modify Taura to teach that the oscillator in Taura is a clock. One would be motivated to do so since the oscillator in Taura is being used to provide a reference frequency for the mixer.

11. As per claim 28: The system of claim 20 further comprising a searcher (Taura title).

12. As per claim 31: The system of claim 20 wherein the clock (Taura fig. 1, 3: 4) is a voltage-controlled (Taura fig. 3: 51 VCO) temperature-compensated (not in Taura) crystal oscillator (Taura: "fig. 3: 56, col. 5 lines 50-51: "The reference oscillator 56 is a voltage-controlled crystal oscillator"). What Taura does not teach is temperature-compensated. It would have been obvious to one skilled in the art at the time of the invention to modify Taura to teach that the clock is temperature-compensated. One would be motivated to do so since integrated

circuits are well known to be affected by temperature as bandgap circuits are used to try to keep a constant output in integrated circuits even while temperature changes.

13. Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taura 6067332 in view of Harms 6249539.

14. Here is how the references teach the claims:

15. As per claim 7: The method of claim 2 (in Taura as discussed above) further comprising performing a search of a pilot channel (not in Taura). What Taura does not teach is performing a search of a pilot channel. What Harms 6249539 teaches is performing a search of a pilot channel (Harms col. 8 lines 34-38: "Searcher receiver 218 determines where the boundaries of a frequency bin or search range are located, and the present invention determines which frequency hypothesis is closest to the center frequency of the detected pilot signal.") It would have been obvious to one skilled in the art at the time of the invention to modify Taura with Harms to teach pilot channel as claimed. One would be motivated to do so since Taura teaches searching for signals and Harms pilot signal is within the scope of signals.

16. As per claim 8: The method of claim 7 further comprising generating a search result (Taura fig. 4: search result is to find the center frequency).

17. As per claim 9: The method of claim 7 wherein the pilot channel is part of a spread spectrum signal (Harms col. 1 lines 16-17: spread spectrum).

18. As per claim 10: The method of claim 8 further comprising assigning a code sequence timing to a demodulator using the search result (Harms fig. 6: 612; assigning by advancing or retarding the sequences).

19. As per claim 11: The method of claim 10 wherein the code sequence timing is a pseudo-noise sequence timing (Harms fig. 6: 612; pn).

20. As per claim 12: The method of claim 10 further comprising starting a lock timer (Taura fig. 4: 123; failure count is started at 0; failure count will increase over time).

21. Claims 29, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taura 6067332 in view of Alisobhani 6760393.

22. Here is how the references teach the claims:

23. As per claim 29: The system of claim 28 wherein the searcher: determines a code sequence timing, and provides the code sequence timing to the demodulator (not in Taura). Alisobhani teaches that it determines a code sequence timing, and provides the code sequence timing to the demodulator (Alisobhani 6760393 col. 8 lines 44-47: "After the locally generated code sequences are aligned in time to the received signal, the correlator 73 operates in the demodulation mode to find the most likely sequence of M-ary symbols that is being received."). It would have been obvious to one skilled in the art at the time of the invention to modify Taura with Alisobhani. One would be motivated to do so if the frequency correction taught in Taura is applied to a GMSK/M-ary radio of Alisobhani (title).

24. As per claim 30: The system of claim 29 wherein the code sequence timing is a pseudo-noise sequence timing (Alisobhani 6760393: title has spread spectrum and a spread spectrum signal is a signal of data which is noise like or pseudo noise).

Allowable Subject Matter

25. Claims 4, 13, 15-19, 21-27 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

26. Claim 14 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

27. As per claims 21-27, the art of record does not suggest the respective claim combinations together and nor would the respective claim combinations be obvious with: a correlator; a code sequence generator; a lock and unlock timer, and a frequency error detector.

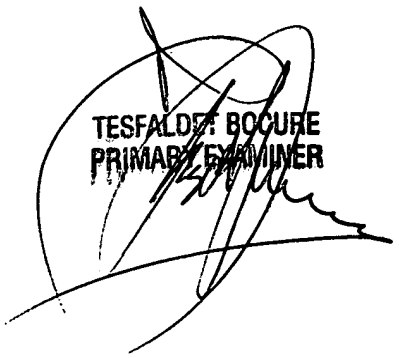
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pankaj Kumar whose telephone number is (571) 272-3011. The examiner can normally be reached on Mon, Tues, Thurs and Fri after 8AM to after 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PK



(object) As per claim 4: The method of claim 3 wherein the previous reference frequency is a last reference frequency used by the electronic device prior to a last power down of the electronic device.

(object) As per claim 10: The method of claim 8 further comprising assigning a code sequence timing to a demodulator using the search result.

As per claim 11: The method of claim 10 wherein the code sequence timing is a pseudo-noise sequence timing.

As per claim 12: The method of claim 10 further comprising starting a lock timer.

As per claim 13: The method of claim 12 wherein, if the demodulator does not lock before the lock timer expires;

(object but rejected under 112) As per claim 14: The method of claim 13 wherein modifying the clock frequency comprises
modifying the reference frequency',
allowing the reference frequency to become stabilized;
performing another search of the pilot channel', and
generating another search result.
increasing the clock frequency by an incremental amount.

As per claim 15: The method of claim 13 wherein modifying the clock frequency comprises decreasing the clock frequency by an incremental amount.

As per claim 16: The method of claim 12 wherein, if the demodulator does lock before the lock timer expires, enabling automatic frequency control.

As per claim 17: The method of claim 16 further comprising starting an unlock timer.

As per claim 18: The method of claim 14 further comprising, if the demodulator does not remain locked when the unlock timer expires:
reassigning the code sequence timing to the demodulator; and
restarting the lock timer.

As per claim 19: The method of claim 17 further comprising, if the demodulator does remain locked when the lock timer expires, decoding a CDMA signal.

(object) As per claim 21: The system of claim 20 wherein the demodulator comprises:
a correlator;
a code sequence generator;
a lock/unlock timer, and
a frequency error detector.

As per claim 22: The system of claim 21 wherein the code sequence generator is a pseudo-noise sequence generator.

As per claim 23: The system of claim 21 wherein lock/unlock timer provides the criteria to determine whether to modify a reference frequency generated by the clock.

As per claim 24: The system of claim 21 wherein the correlator determines an in-phase correlator output and a quadrature-phase correlator output.

As per claim 25: The system of claim 24 wherein the correlator provides the in-phase correlator output and the quadrature-phase correlator output to the frequency error detector.

As per claim 26: The system of claim 21 wherein the frequency error detection unit:
determines a frequency error between the clock and a base station; and
generates the negative feedback signal.

As per claim 27: The system of claim 26 wherein the frequency error detection unit provides the negative feedback signal to the clock.